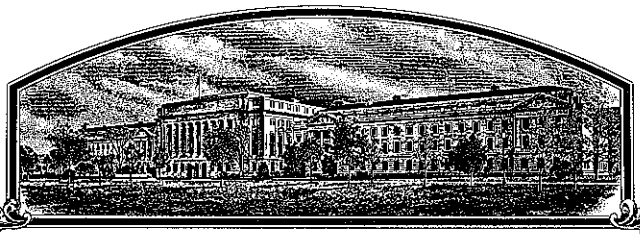

No. 9000190

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Pioneer Hi-Bred International, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF eighteen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'9162'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of* Washington, D.C. *this* 29th *day of* January *in the year of our Lord one thousand nine hundred and* ninety-three.

Attest:

Kenneth A. Evans

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

APPROVAL EXPIRES 2-28-88

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

FORM APPROVED: OMB NO. 0581-0055

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

1. NAME OF APPLICANT(S): Pioneer Hi-Bred International, Inc.

2. TEMPORARY DESIGNATION:

3. VARIETY NAME: 9162

4. ADDRESS *(Street and No. or R.F.D. No., City, State, and Zip Code)*: 700 Capital Square, 400 Locust Street, Des Moines, IA 50309

5. PHONE *(Include area code)*: 515-270-3300

FOR OFFICIAL USE ONLY

PVPO NUMBER: 9000190

FILING — DATE: May 29, 1990 — TIME: ☐ A.M. ☐ P.M.

6. GENUS AND SPECIES NAME: Glycine Max

7. FAMILY NAME *(Botanical)*: Leguminosae

8. KIND NAME: Soybean

9. DATE OF DETERMINATION: October 1984, January 1988 (increase)

FEES RECEIVED — AMOUNT FOR FILING: $ 2150 — DATE: May 29, 1990

AMOUNT FOR CERTIFICATE: $ 250.00 — DATE: January 7, 1993

10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION *(Corporation, partnership, association, etc.)*: Corporation

11. IF INCORPORATED, GIVE STATE OF INCORPORATION: Iowa

12. DATE OF INCORPORATION: 1926

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS

James E. Miller
7301 NW 62nd Ave., P.O. Box 85
Johnston, IA 50131-0085

Michael Roth
700 Capital Sq.
400 Locust St.
Des Moines, IA 50309
(5 Feb. 1993)

~~Mary Helen Mitchell (copy)~~
~~7250 NW 62nd~~
Johnston, IA 50131
PHONE *(Include area code)*:

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED

a. ☒ Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*
b. ☒ Exhibit B, Novelty Statement.
c. ☒ Exhibit C, Objective Description of Variety *(Request form from Plant Variety Protection Office.)*
d. ☐ Exhibit D, Additional Description of Variety.
e. ☒ Exhibit E, Statement of the Basis of Applicant's Ownership.

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act.)* ☐ Yes *(If "Yes," answer items 16 and 17 below)* ☒ No

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? ☐ Yes ☒ No

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? ☐ Foundation ☐ Registered ☐ Certified

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.? ☐ Yes *(If "Yes," give date)* ☒ No

19. HAS THE VARIETY BEEN RELEASED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES? ☐ Yes *(If "Yes," give names of countries and dates)* ☒ No

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT: James E. Miller — DATE: 5/11/90

SIGNATURE OF APPLICANT: — DATE:

FORM LS-470 (3-86) *Edition of 7-84 obsolete.*

Attachment: 9162 Soybean (March, 1990)

Exhibit A: Variety 9162 evolved from a cross of variety 2981 X A1937. It is an F5-derived variety which was advanced to the F5 generation by modified single-seed descent. The F6 progeny row of 9162 was grown in Ohio during the summer of 1984. Subsequently, 9162 has undergone five years of extensive testing and purification and has been observed by the breeder to be uniform and stable for all plant traits from generation to generation, with no evidence of variants.

Seed hila of variety 9162 are brown in color, and under certain environmental conditions may appear buff in color. When seeds of these types are planted they produce plants having seeds with brown hila color.

Five acres of 9162 (breeders seed) were grown in 1988. 61 acres of parent seedstock (foundation seed equivalent) were grown in 1989.

Exhibit B: Variety 9162 most closely resembles the variety A1937, CX187, DSR135, DSR141, and variety 9121. However, variety 9162 has high peroxidase activity and is susceptable to race 1 of Phytophthora megasperma var. sojae whereas A1937 has low peroxidase activity and is resistant to race 1 of Phytophthora megasperma. Variety 9162 is significantly earlier and shorter than A1937 (Table 1 and 2 respectively).

Variety 9162 is signficantly higher in oil content than CX187 (Table 4).

Variety 9162 has high peroxidase activity and whereas DSR141 has low peroxidase activity.

Variety 9162 is significantly later than 9121 (Table 3).

Exhibit E: Pioneer Hi-Bred International, Inc. is the sole, original, and first breeder of soybean variety 9162, for which it solicits a certificate of protection.

FORM APPROVED: OMB NO. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Soybean)

OBJECTIVE DESCRIPTION OF VARIETY
SOYBEAN (Glycine max L.)

NAME OF APPLICANT(S)	TEMPORARY DESIGNATION	VARIETY NAME
Pioneer Hi-Bred International, Inc.	9162	9162

ADDRESS *(Street and No., or R.F.D. No., City, State, and Zip Code)*
700 Capital Square
400 Locust Street
Des Moines, IA 50309

FOR OFFICIAL USE ONLY
PVPO NUMBER
9000190

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g., [0][9]). Starred characters ★ are considered fundamental to an adequate soybean variety description. Other characters should be described when information is available.

1. SEED SHAPE:

[2]

1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)
2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)
3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)
4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

★ **2. SEED COAT COLOR: (Mature Seed)**

[1] 1 = Yellow 2 = Green 3 = Brown 4 = Black 5 = Other *(Specify)* _____

3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

[1] 1 = Dull ('Corsoy 79'; 'Braxton') 2 = Shiny ('Nebsoy'; 'Gasoy 17')

★ **4. SEED SIZE: (Mature Seed)**

[1][6] Grams per 100 seeds

★ **5. HILUM COLOR: (Mature Seed)**

[3] 1 = Buff 2 = Yellow 3 = Brown 4 = Gray 5 = Imperfect Black 6 = Black 7 = Other *(Specify)* _____

★ **6. COTYLEDON COLOR: (Mature Seed)**

[1] 1 = Yellow 2 = Green

★ **7. SEED PROTEIN PEROXIDASE ACTIVITY:**

[2] 1 = Low 2 = High

★ **8. SEED PROTEIN ELECTROPHORETIC BAND:**

[-] 1 = Type A ($SP1^a$) 2 = Type B ($SP1^b$)

★ **9. HYPOCOTYL COLOR:**

[-] 1 = Green only ('Evans'; 'Davis') 2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')
3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')
4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

★ **10. LEAFLET SHAPE:**

[3] 1 = Lanceolate 2 = Oval 3 = Ovate 4 = Other *(Specify)* _____

11. LEAFLET SIZE:

[2] 1 = Small ('Amsoy 71'; 'A5312') 2 = Medium ('Corsoy 79'; 'Gasoy 17')
3 = Large ('Crawford'; 'Tracy')

12. LEAF COLOR:

[2] 1 = Light Green ('Weber'; 'York') 2 = Medium Green ('Corsoy 79'; 'Braxton')
3 = Dark Green ('Gnome'; 'Tracy')

★ **13. FLOWER COLOR:**

[2] 1 = White 2 = Purple 3 = White with purple throat

★ **14. POD COLOR:**

[2] 1 = Tan 2 = Brown 3 = Black

★ **15. PLANT PUBESCENCE COLOR:**

[2] 1 = Gray 2 = Brown (Tawny)

16. PLANT TYPES:

[2] 1 = Slender ('Essex'; 'Amsoy 71') 2 = Intermediate ('Amcor'; 'Braxton')
3 = Bushy ('Gnome'; 'Govan')

★ **17. PLANT HABIT:**

[3] 1 = Determinate ('Gnome'; 'Braxton') 2 = Semi-Determinate ('Will')
3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

★ **18. MATURITY GROUP:**

[0][4] 1 = 000 2 = 00 3 = 0 4 = I 5 = II 6 = III 7 = IV 8 = V
9 = VI 10 = VII 11 = VIII 12 = IX 13 = X

★ **19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)**

BACTERIAL DISEASES:

★ [0] Bacterial Pustule *(Xanthomonas phaseoli* var. *sojensis)*

★ [0] Bacterial Blight *(Pseudomonas glycinea)*

★ [0] Wildfire *(Pseudomonas tabaci)*

FUNGAL DISEASES:

★ [0] Brown Spot *(Septoria glycines)*

Frogeye Leaf Spot *(Cercospora sojina)*

★ [0] Race 1 [0] Race 2 [0] Race 3 [0] Race 4 [0] Race 5 [ ] Other *(Specify)* _____

[0] Target Spot *(Corynespora cassiicola)*

[0] Downy Mildew *(Peronospora trifoliorum* var. *manshurica)*

[0] Powdery Mildew *(Microsphaera diffusa)*

★ [0] Brown Stem Rot *(Cephalosporium gregatum)*

[0] Stem Canker *(Diaporthe phaseolorum* var. *caulivora)*

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

FUNGAL DISEASES: (Continued)

★ [0] Pod and Stem Blight *(Diaporthe phaseolorum* var; *sojae)*

[0] Purple Seed Stain *(Cercospora kikuchii)*

[0] Rhizoctonia Root Rot *(Rhizoctonia solani)*

Phytophthora Rot *(Phytophthora megasperma* var. *sojae)*

★ [1] Race 1 [1] Race 2 [1] Race 3 [1] Race 4 [1] Race 5 [1] Race 6 [1] Race 7

[1] Race 8 [1] Race 9 [ ] Other *(Specify)* _____

VIRAL DISEASES:

[0] Bud Blight (Tobacco Ringspot Virus)

[0] Yellow Mosaic (Bean Yellow Mosaic Virus)

★ [0] Cowpea Mosaic (Cowpea Chlorotic Virus)

[0] Pod Mottle (Bean Pod Mottle Virus)

★ [0] Seed Mottle (Soybean Mosaic Virus)

NEMATODE DISEASES:

Soybean Cyst Nematode *(Heterodera glycines)*

★ [1] Race 1 [1] Race 2 [1] Race 3 [1] Race 4 [ ] Other *(Specify)* _____

[0] Lance Nematode *(Hoplolaimus Colombus)*

★ [0] Southern Root Knot Nematode *(Meloidogyne incognita)*

★ [0] Northern Root Knot Nematode *(Meloidogyne Hapla)*

[0] Peanut Root Knot Nematode *(Meloidogyne arenaria)*

[0] Reniform Nematode *(Rotylenchulus reniformis)*

[0] OTHER DISEASE NOT ON FORM *(Specify)*: _____

20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

★ [2] Iron Chlorosis on Calcareous Soil

[ ] Other *(Specify)* _____

21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

[0] Mexican Bean Beetle *(Epilachna varivestis)*

[0] Potato Leaf Hopper *(Empoasca fabae)*

[ ] Other *(Specify)* _____

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape	A1937	Seed Coat Luster	A1937
Leaf Shape	A1937	Seed Size	A1937
Leaf Color	A1937	Seed Shape	A1937
Leaf Size	A1937	Seedling Pigmentation	

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/ POD
				CM Width	CM Length	% Protein	% Oil		
9162 Submitted	115.3	7.8	82.5	--	--	--	--	--	--
A1937 Name of Similar Variety	118.6	6.6	94.5	--	--	--	--	--	--

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A_2 in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

TABLE 1

COMP 9162 A1937 TRAIT= days to maturity

REP	X1	X2	X1-X2	$(X1-X2)^2$
1	128	132	-4	16
2	127	133	-6	36
3	128	132	-4	16
4	125	128	-3	9
5	124	127	-3	9
6	125	128	-3	9
7	109	113	-4	16
8	109	114	-5	25
9	110	116	-6	36
10	110	113	-3	9
11	110	113	-3	9
12	110	114	-4	16
13	115	116	-1	1
14	114	117	-3	9
15	115	117	-2	4
16	109	112	-3	9
17	109	113	-4	16
18	109	112	-3	9
19	114	116	-2	4
20	117	119	-2	4
21	111	118	-7	49
22	112	115	-3	9
23	113	115	-2	4
24	113	114	-1	1
	2766	2847	-81	325
	115.3	118.6	-3.38	13.54
N=	24			

NUMOR= 51.625
DENOM= 552
SD= 0.30582
D/SD= -11.036 **
DF= 23

TABLE 2

REP	9162 A1937 X1	X2	X1-X2	TRAIT = HEIGHT IN INCHES (X1-X2)2
1	32	37	-5	25
2	35	40	-5	25
3	31	36	-5	25
4	32	36	-4	16
5	37	40	-3	9
6	22	30	-8	64
7	22	29	-7	49
8	23	29	-6	36
9	36	45	-9	81
10	36	39	-3	9
11	34	37	-3	9
12	32	36	-4	16
13	32	37	-5	25
14	30	37	-7	49
15	29	32	-3	9
16	28	37	-9	81
17	29	34	-5	25
18	35	39	-4	16
19	30	43	-13	169
20	34	41	-7	49
21	29	34	-5	25
22	32	35	-3	9
23	29	35	-6	36
24	35	36	-1	1
25	37	41	-4	16
26	36	37	-1	1
27	34	40	-6	36
28	32	38	-6	36
29	35	37	-2	4
30	41	50	-9	81
31	41	48	-7	49
	1000	1165	-165	1081
	32.26	37.58	-5.32	34.871
N=	31			

DENOM =	930
SD =	0.46694
D/SD =	-11.399
DF =	30
N =	31

TABLE 3

TRAIT= DAYS TO MATURITY

REP	9162 X1	9121 X2	X1-X2	(X1-X2)2
1	128	124	4	16
2	128	126	2	4
3	125	121	4	16
4	124	121	3	9
5	125	121	4	16
6	109	108	1	1
7	110	109	1	1
8	110	107	3	9
9	110	106	4	16
10	110	107	3	9
11	115	109	6	36
12	114	109	5	25
13	115	109	6	36
14	109	106	3	9
15	109	102	7	49
16	109	105	4	16
17	114	107	7	49
18	117	109	8	64
19	112	109	3	9
20	113	109	4	16
21	113	107	6	36
	2419	2331	88	442
	115.2	111	4.19	21.0476
N=	21			

DENOM =	420
SD =	0.41758
D/SD =	10.035
DF =	20
N =	21

Ammendment to PVP Application No. 9000190. 8/31/92

Table 4. Variety '9162' vs 'CX187' for percent oil content.

All observations are from bulked seed harvested from research plots. Research plots were planted using a randomized complete block design. Planted plot length was 21 feet, trimmed to 15 feet. Plot width was 4 30 inch rows, or 10 feet. Percent oil was determined using a Tecator 1255 NIR spectrophotometer. Data was taken in the years indicated.

1989

REP	9162 X1	CX187 X2	X1-X2	(X1-X2)**2
1	23	20.7	2.3	5.29
2	22.6	22	0.6	0.36
3	22.4	20.7	1.7	2.89
4	23.2	21.7	1.5	2.25
5	23.1	21.3	1.8	3.24
6	22.4	20.9	1.5	2.25
7	23.4	20.8	2.6	6.76
sum	160.1	148.1	12	23.04
ave	22.87	21.16	1.714	

SD**2= (23.04 - (12**2)/7) / (7 * 6)
SD**2= 0.05878
SD= 0.24244
t = 1.714/0.24244
t = 7.07107 ** significant .1% level
DF= 6

n groups of individuals = 7

ave oil content of 9162 = 22.9%
ave oil content of CX187 = 21.2%

1990

REP	9162 X1	CX187 X2	X1-X2	(X1-X2)**2
1	24	21.3	2.7	7.29
2	25.3	21.9	3.4	11.56
3	23.3	21.1	2.2	4.84
4	23.8	20.9	2.9	8.41
5	23.5	20.9	2.6	6.76
6	24.4	20.7	3.7	13.69
sum	144.3	126.8	17.5	52.55
ave	24.05	21.13	2.917	

SD**2= (52.55 - (17.5**2)/6) / (6 * 5)
SD**2= 0.05028
SD= 0.22423
t = 2.917/0.22423
t = 13.0076 ** significant .1% level
DF= 5

n groups of individuals = 6

ave oil content of 9162 = 24.1%
ave oil content of CX187 = 21.1%

Summary

REP	9162 X1	CX187 X2	X1-X2	(X1-X2)**2
sum	304.4	274.9	29.5	75.59
ave	23.42	21.15	2.269	

SD**2= (75.59 - (29.5**2)/13)/(13 * 12)
SD**2= 0.05543
SD= 0.23544
t = 2.269/0.23544
t = 9.63809 ** significant .1% level
DF= 12

n groups of individuals = 13

ave oil content of 9162 = 23.4%
ave oil content of CX187 = 21.1%

Addition to PVP Application No. 9100190. November 10, 1992

Derivation of oil data presented in Table 4.

In our best scientific judgement, the oil data presented in Table 4 fairly and accurately describes differences between variety '9162' and variety 'CX187'. This judgement is based upon the method of plot harvest, method of seed storage, and characteristics of the NIR instrument.

Plots are grown in a randomized complete block design. Harvest occurs after all pods have dried to the point that they will thresh completely. At this point the moisture difference of varieties of the same maturity is generally not more than two percent. Often it is considerably less.

Seed from research plots is typically dried or allowed to equilibrate before weighing, at which point moisture differences are very small. In this set of data the largest moisture difference observed during weighing of these two varieties was 0.7%. The average moisture difference of plots later sampled for oil determination was 0.2%.

Following weighing, seed samples are stored from several weeks up to several months in cloth bags. During this period samples reach a stable, uniform moisture.

These seed samples are then analyzed using a Tecator 1255 NIR Spectrophotometer. The machine has been calibrated with samples analyzed at Woodson-Tenent Laboratories using acredited methods. The calibration yields data virtually identical to that which comes from the standard FGIS calibration. In addition, the 1255 adjusts for moisture differences. Since samples with various moistures have been used to calibrate the machine, moisture is effectively eliminated from the prediction equation. Data presented is the percent oil of a sample corrected to 0% moisture.

//